

United States
Department of
Agriculture

Forest
Service

Southwestern
Region

August 2015



Apache-Sitgreaves National Forests Plan

Monitoring and Evaluation Report Fiscal Year 2014



The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TTY). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, SW, Washington, DC 20250-9410, or call (800) 795-3272 (voice) or (202) 720-6382 (TTY). USDA is an equal opportunity provider and employer.

Printed on recycled paper – August, 2015

Table of Contents

Introduction	1
Integrated Resource Restoration	1
Watershed and Air Quality Management	1
Fire and Fuels Management	2
Cultural Resources	3
Rangeland Management	9
Terrestrial Wildlife	10
Threatened, Endangered, Proposed, and Sensitive Species (TEPS).....	13
Mexican Gray Wolf Reintroduction Program	13
Aquatic Species	14
Transportation	17
Lands and Minerals	21
Forest Products / Resource Management	23
Biomass/Hazardous Fuels Utilization	24
Insects and Diseases	24
Recreation.....	25
Plan Revision.....	28

List of Figures

Figure 1. A prescribed fire project on Clifton Ranger District which resulted in improved forage and ecological condition in grassland and savanna vegetation types was monitored for BMP implementation and effectiveness using new national protocols.....	2
Figure 2. Prescribed fire near Greer, AZ, fall, 2014.....	3
Figure 3. Caldwell Cabin Recreational Rental--a National Register-eligible PHA.....	4
Figure 4. “Before” photo of the interior of the Double Circle Ranch Lodge with the Formica counter top in place.....	7
Figure 5. “After” photo of the interior of the Double Circle Ranch Lodge showing the juniper counter top.	7
Figure 6. Disturbances to one of the Apache Railway mainlines. A turn-around point on the berm is in the foreground and pushed trees within the site boundary in the background, right.....	9
Figure 7. Wild turkeys on the ANSFs.	10
Figure 8. New Mexico meadow jumping mouse.	12
Figure 9. Habitat for New Mexico meadow jumping mouse along the East Fork of the Little Colorado River.....	12
Figure 10. Three Forks springsnail habitat work to prevent crayfish infestation.	15
Figure 11. Endangered loach minnow found in Campbell Blue Creek.....	16
Figure 12. Mobile rock trimmer in use on Pratt Lake Road, March, 2014.	18
Figure 13. Newly paved NFSR 249, a project that was completed in fiscal year 2014.	19
Figure 14. Completed low water crossing on Forest Road 24.	20
Figure 15. CTLE non-federal Rucker parcel to be acquired.	22
Figure 16. Resurvey, remarking, and reposting of NF Property Boundary as a result of 2011 Wallow Fire.....	22
Figure 17. Blue Vista Overlook.	26
Figure 18. Blackjack Campground vault toilet.	26
Figure 19. Blackjack Campground accessible pathway.	27
Figure 20. Lewis Canyon Campground vault toilet.	27

List of Tables

Table 1. Number and cause of wildfires during 2014	3
Table 2. Acres surveyed and numbers of sites recorded or re-recorded in fiscal year 2014	4
Table 3. Listing of Section 110 projects in fiscal year 2014	6
Table 4. Archaeological Resources Protection Act (ARPA) investigations in fiscal year 2014	8
Table 5. Permitted and authorized head months of occupancy in 2014	9
Table 6. Wildlife program project accomplishments and funding for fiscal year 2014	11
Table 7. Summary of projects by species/ecosystem benefitting from the wildlife program during fiscal years 2014	11
Table 8. Summary of TEPS monitoring completed between 2014	13
Table 9. Road maintenance and improvement in fiscal year 2014	17
Table 10. Commercial timber and personal use and commercial permits sold in FY 2014	23

Introduction

This document is the Apache-Sitgreaves National Forests (ASNFs) monitoring and evaluation report for fiscal year 2014. The report provides monitoring information and addresses monitoring questions as identified in chapter five (monitoring plan) of the 1987 Apache-Sitgreaves National Forests Plan. The ASNFs finished revising the 1987 plan in fiscal year 2015.

Integrated Resource Restoration

During fiscal year 2012, the Forest Service initiated a pilot project in Regions 1, 3, and 4 to realign the budget structure to focus landscape-scale restoration across multiple resource areas and to support and accelerate the pace of a wide spectrum of restoration and resiliency enhancing activities. This new emphasis merged programs previously separated out as forest products, vegetation and watershed management, fish and wildlife habitat management, non-WUI (wildland urban interface) hazardous fuels, post-fire restoration and rehabilitation, and legacy roads and trails (including road decommissioning).

This change was prompted by the Secretary of Agriculture's vision for integrated watershed protection and restoration that recognizes the role of healthy forests in enhancing water resources and maintaining resiliency within a changing climate. This integrated approach has facilitated the reduction of risk from uncharacteristic wildfire, aided the restoration of habitat in entire watersheds, and provided wood to local and regional industries.

The Forests began using this integrated approach in planning during fiscal year 2012 and have continued through fiscal year 2014. Seven priority landscapes with 6 priority watersheds were identified to implement Integrated Resource Restoration over the 5 year pilot period. The priority landscapes are Timber-Mesa-Vernon, Rim Lakes, Larson, Escudilla East, East Eagle-Sheep Wash, Black River, and Wildcat. The priority watersheds are Long Tom Canyon-Chevelon Canyon, Upper Wildcat Creek, Canovis Creek-Coyote Creek, Pratt Lake, Long Lake, and Dry Lakes-Nutrios Creek.

Watershed and Air Quality Management

There were no identified riparian improvement projects accomplished in 2014. Riparian areas, however, continue to benefit from improved upland conditions derived from landscape scale restoration treatments and from natural recovery after the Wallow Fire.

The ASNFs continue to design, implement and monitor best management practices (BMPs) for ground disturbing activities. In 2014, monitoring using the new national BMP criteria occurred on 6 sites in forest, woodland and grassland vegetation types (Figure 1). All of the BMPs monitored were effective in reducing sediment and loss of soil productivity. Soil disturbance was monitored within the Wallow West Salvage area. Detrimental soil disturbance was surveyed as being less than the 15 percent guideline established within the NEPA analysis. In fiscal year 2014, the Forests reported 35,731 acres of soil and water resource improvement. Watershed improvement accomplishments across the ASNFs have been directly linked to landscape-scale restoration as part of the Four Forest Restoration Initiative (4FRI). Most of the improvements resulted from mechanically thinning overstocked forests, stabilizing forest roads and trails, and using prescribed fire to improve groundcover and reduce excessive fuel loading.



Figure 1. A prescribed fire project on Clifton Ranger District which resulted in improved forage and ecological condition in grassland and savanna vegetation types was monitored for BMP implementation and effectiveness using new national protocols.

Analysis began on 2 large-scale planning areas, Larson and Upper Rocky Arroyo Restoration Projects. Planning for these projects involves identifying potential projects including treatments of vehicle routes and stream crossings, re-establishing and protecting riparian species, treating unstable slopes, and thinning forest and woodland to reduce risk of uncharacteristic wildfires and to restore grasslands. A Watershed Restoration Action Plan was completed for two 6th code watersheds covering the Larson project just after the end of the fiscal year. Treatments identified in the plan will occur over a 5 year period and are expected to maintain satisfactory watershed conditions on both watersheds.

The 2014 San Juan fire, a 7000-acre wildland fire, was evaluated by the Forest BAER team and successfully seeded with native grass species and barley as a cover crop. Runoff from the fire was heavy during monsoon rains but generally stayed within stream banks. Fuel treatments within the area greatly limited the extent and severity of the fire.

Streamflow monitoring continued in selected streams to perfect instream flow water rights, primarily in the Upper San Francisco and Black River Watersheds. These non-consumptive rights are junior to all existing water right claims, but are critical for the protection of aquatic habitat and water-based recreation.

Air quality monitoring for the Mount Baldy Wilderness continued in fiscal year 2014 and is entering its twelfth year. Because smoke contributes to regional haze, forest managers had to request approval from Arizona Department of Environmental Quality daily for ignition of wildland fire projects to minimize cumulative effects across the state.

Fire and Fuels Management

Fiscal year 2014 was a below-average year for the number of fires and acreage burned. 100 fires occurred within national forest jurisdiction during the year burning nearly 11,790 acres (table 1). Only two fires exceeded 300 acres during 2014, and one fire exceeded 3800 acres.

Table 1. Number and cause of wildfires during 2014

Cause	Count	Acres
Lightning	68	4653.8
Equipment Fires	3	0.3
Smoking	0	0
Campfires	23	6825.3
Debris Burning	1	0.1
Arson	0	0
Children Caused	0	0
Miscellaneous	6	310
Total	100	11789.7

Fire managers also used fire as a tool to reduce fuel loads and restore fire-adapted ecosystems. In 2014 , 21,501 acres of prescribed fire were accomplished including both pile and broadcast ignitions (Figure 2).



Figure 2. Prescribed fire near Greer, AZ, fall, 2014.

Cultural Resources

Fiscal year 2014 marked another busy year for the ASNFs' archaeologists. The Forest Heritage Program was understaffed, with detailers being brought in to fill the empty positions. During the latter half of the fiscal year, the two vacant permanent positions at Black Mesa and Lakeside Ranger Districts were finally filled, and four temps were hired to assist with Sitgreaves projects.

The compliance-related work under Section 106¹ of the National Historic Preservation Act and the Region 3 Programmatic Agreement was related to all sorts of activities this year. Most of the inventory work completed by staff archaeologists was for smaller recreation, lands, engineering, special uses and forested vegetation and fuels projects. Seven cultural resource survey contracts covering approximately 1.2 million acres of NFS land were prepared and administered for large-scale 4FRI bridge projects.

Table 2. Acres surveyed and numbers of sites recorded or re-recorded in fiscal year 2014

Project Acreage	Acres Surveyed	Acres Resurveyed	Acres Previously Surveyed	Number Of Sites Recorded, Updated, or Monitored ^a
7,733	4,267	21	3,904	85

^aAs of August, 2015, the ASNFs have 7,541 cultural resources listed in its INFRA database

As a probable consequence of the ASNFs' heritage program department having mostly new archaeologists on staff and being understaffed during early fiscal year 2014, only four sites were reported as monitored for Section 106 projects. These sites were monitored during the Woolhouse Project.



Figure 3. Caldwell Cabin Recreational Rental--a National Register-eligible PHA.

The San Juan Fire burned approximately 7,000 acres on the Fort Apache Indian Reservation and Springerville and Lakeside Ranger Districts. Most of the burned area had previously been surveyed for cultural resources, and five sites were known to be located in the burn area. Archaeological resource advisors monitored the sites and surveyed approximately 160 acres of dozer line (140 on NFS land and 20 on reservation land). One of the sites was not located, and no new cultural resources were identified. Two sites were not affected by the fire, and two sites were

¹ Section 106 requires agencies to take into account the effects of their actions on historic properties

burned over by a low to moderate intensity fire. Neither of these sites were adversely affected by the fire.

The ASNFs archaeologists also worked hard on Section 110² targets. In FY 2014, the ASNFs met the Section 110 target with a score of 59, which exceeded the minimal score of 45 for “Heritage Program Managed to Standard.” Types of Section 110 projects included surveys to locate, monitor, and record sites (206 acres), legacy data entry (INFRA and GIS databases), engaging with the Arizona Site Stewards and members of the Arizona Archaeological Society, giving public talks, giving a site tour, participating in Public Lands Day, evaluating 20 sites for the National Register of Historic Places, rehabilitating one historic structure, and monitoring or enhancing 10 Priority Heritage Assets (PHA) and eight non-PHAs.

² Section 110 requires agencies to identify, evaluate, and protect historic properties

Table 3. Listing of Section 110 projects in fiscal year 2014

Project Type	Fiscal Year(s)	Number of Sites Involved	Notes
Site Monitoring			
Direct Protection	2014	4	Four sites protected from juniper pushing impacts in 2014.
Site Steward Monitoring	2014	8	Eight sites on the Black Mesa and Lakeside Ranger Districts were monitored by Arizona Site Stewards in 2014
Priority Heritage Asset (PHA) Monitoring	2014	10	Ten PHAs on the Alpine, Springerville and Lakeside Ranger Districts were monitored in 2014.
Presentations/Windows-In-The-Past Projects			
Professional Presentations	2014	2 presentations	Two talks about archaeology were presented to the Agave House Chapter of the Arizona Archaeological Society in 2014.
Public Outreach/Guided Talks	2014	1	One guided site tour was given at the Black Mesa Ranger District.
Site Evaluations			
National Register Evaluations	2014	20	Twenty sites from the Alpine, Springerville and Clifton Ranger Districts were evaluated for inclusion on the National Register of Historic Places in 2014.
Planning			
Forest Plan Revision	2012	-	The cultural resource chapters were completed for the new Forest Plan Revision scheduled to be completed in FY 2015. These chapters were completed in consultation with Tribes.
Other Heritage Resource Program Planning	2014	2	A plan for monitoring cultural resources associated with non-4FRI projects was completed, and a Heritage Program Section 110 plan for FY 14 and 15 budgets was also completed.
Training/Recertification			
Para-Archaeologist Training/Recertification	2014	12	In order to meet the guidelines set forth in FSM 2360, R-3 Supplement 2300-99-3, para-archaeologist refresher training was conducted throughout the 2014 field season. Nine para-archaeologists were recertified. In addition, 3 para-archaeologists were newly certified.

One noteworthy Section 110 project was the Public Lands Day Project on the Clifton Ranger District. Seventeen volunteers from the Arizona Pilots Association conducted minor maintenance and repairs at the historic Double Circle Ranch. The work took place in the vicinity of the lodge, bunkhouse, and runway. The damaged Formica countertop was replaced with a 3 inch thick alligator juniper countertop (Figure 4, 5), the front door of the lodge was repaired so that it closed properly, the lodge and bunkhouse were cleaned, a coating of linseed oil was applied to both structures, and the floor of the bunkhouse was also oiled. Implementation resulted in a “No Effect” to the two buildings.



Figure 4. “Before” photo of the interior of the Double Circle Ranch Lodge with the Formica counter top in place.



Figure 5. “After” photo of the interior of the Double Circle Ranch Lodge showing the juniper counter top.

Two looting incidents and one incident of unintentional vandalism were reported in 2014. As of 2015, both of the looting incidents are still under investigation. The unintentional vandalism was corrected onsite. Table 4 provides information about these three incidents.

Table 4. Archaeological Resources Protection Act (ARPA) investigations in fiscal year 2014

Incident Type	Fiscal Year	Number of Sites Involved	Description
Looting	2014	1	In December 2013, a contractor reported that a Mogollon habitation site on the Lakeside Ranger District was recently looted. This site is the same site that was mentioned in the 2012-2013 monitoring report that was reported by a private citizen in 2012. Several of the existing holes had been dug deeper, exposing walls, ceramics, and faunal bone, and two additional holes were dug. The incident is still under investigation.
Looting	2014	1	In August 2014, a detailed Forest Archaeologist, the Clifton Ranger District Archaeologist, and one of the Clifton para-archaeologists discovered a prehistoric cave and pictograph site that was recently looted. Much of the cave floor was disturbed by past and recent looting. The incident is still under investigation.
Unintentional Vandalism	2014	1	In February 2014, an Arizona Site Steward reported unintentional vandalism at a homestead site located on the Lakeside Ranger District. The site steward noticed a wooden cross that had not been there during previous visits. The cross was fashioned from two pieces of milled lumber from the floor of the main house. A portion of the cross was engraved and highlighted with a black marker pen with a person's name and other illegible writing inscribed on it. The Arizona Site Steward Regional Coordinator and the Springerville Zone Archaeologist visited the site later that month and the cross was dismantled and the wood returned to the house feature. The cross was removed in order to discourage additional monuments on the site. This action had "No Effect" on the site.

In 2014, two inadvertent effects to one prehistoric site and an historic railroad grade were reported. The inadvertent effects resulted from a contractor involved in the Woolhouse vegetation removal project on the Lakeside Ranger District. The proposed project was for removing invasive vegetation by utilizing heavy equipment to push trees and brush into piles which were then chipped and dispersed on site or removed from the project area during implementation. A tracked vehicle was driven over the edge of a prehistoric lithic scatter that was flagged for avoidance. In two separate incidents, tracked and rubber-tired vehicles were driven up, over, or turned around on one of the National Register-eligible mainlines associated with the Apache Railway (Figure 6). Juniper trees on and adjacent to the railroad grade (within the site boundary) were pushed or plucked from the ground. The site and associated features were marked for avoidance. The contractor was notified immediately and operations stopped within the vicinity of the sites until issues were resolved. The prehistoric site was not adversely affected, and it was reflagged where it was driven over. The contractor was required to rehabilitate the railroad grade by raking the

disturbed areas and either removing the pushed junipers by hand or by leaving them in place. The railroad grade was also reflagged for avoidance.



Figure 6. Disturbances to one of the Apache Railway mainlines. A turn-around point on the berm is in the foreground and pushed trees within the site boundary in the background, right.

Rangeland Management

The ASNFs administered nearly two million National Forest System acres in 92 active livestock grazing allotments in 2014. The ASNFs' rangeland management emphasis has been on maintaining satisfactory wildlife habitat, watershed, riparian, and forage vegetation. In 2014, the ASNFs permitted livestock use is approximately 186,000 head months. A few allotments were not grazed at all by livestock, and many allotments were authorized less livestock than full permitted numbers (Table 5). This total or partial non-use happened because of resource protection needs, wildfire, personal convenience of the ranchers, or because several allotments are vacant.

Table 5. Permitted and authorized head months of occupancy in 2014

Head Months	Cattle	Sheep	Horses & Burros	Total Head Months
Permitted	136,663	47,522	2,322	186,507
Authorized	94,874	45,388	2,301	142,563

Range specialists conducted condition and trend studies on 3 allotments in preparation of upcoming Rescission Act environmental analysis in 2014. The Forests continue to work on reducing excess canopy in piñon and juniper woodlands. A total of 29,885 acres were treated in 2014 using mechanical treatments, prescribed burning, and managed wildfires. In addition, the Forests treated 654 acres of noxious and undesired exotic weeds.

Terrestrial Wildlife

Forest and district biologists work with other resource specialists to evaluate habitat for wildlife and rare plants and to monitor the effects of actions taking place on the ASNFs in those habitats. The terrestrial wildlife program was also actively working to improve habitat for a variety of species forestwide during 2014. There are 17 management indicator species (MIS) used to measure the effects of management actions on species and their habitats.

During 2014, the ASNFs monitored Mexican spotted owls (MSO) and northern goshawks for individual projects, through Rocky Mountain Bird Observatory (RMBO) and the White Mountain Stewardship Landbird Monitoring Program. Mule deer, turkey, antelope, and elk are managed as game species and are monitored annually by Arizona Game and Fish Department (AGFD) (Figure 7).



Figure 7. Wild turkeys on the ANSFs.

Population and habitat trends on the ASNFs were generally stable for all MIS during 2014, with the exception of goshawk which is considered to have a stable to declining habitat trend and a declining population trend; Mexican spotted owl, which is considered to have declining habitat and population trends; Rocky Mountain elk, which is considered to have an increasing habitat trend with a stable to declining population trend; and red squirrel, which is considered to have a declining habitat trend and a stable to declining population trend across the Forests.

The wildlife program was very active during 2014 with a variety of projects, surveys, monitoring, contracts and agreements occurring. These included agreements with AGFD, Northern Arizona University (NAU), and Rocky Mountain Bird Observatory (RMBO) for the Bald Eagle NestWatch Program, AGFD Pronghorn Antelope Movement Study, NAU Small Mammal and Bat Survey, and RMBO Northern Goshawk Monitoring. Surveys completed included forestwide bald eagle winter counts, forestwide MSO inventory and surveys, forestwide northern goshawk inventory and monitoring, southwestern willow flycatcher surveys, and wildlife structure and development inventory post-Wallow Fire.

Projects included Arizona and Bebb's willow protection and monitoring, other wildlife enclosure maintenance, Railroad allotment grassland restoration, precommercial thinning, commercial

thinning, prescribed burn projects, guzzler maintenance, and Wallow Fire bark beetle treatments in MSO protected activity centers (PAC).

The ASNFs continue to have a large partnership program, working with multiple partners in 2014 to complete habitat improvement projects for a variety of species. Partners included AGFD, Rocky Mountain Elk Foundation, Arizona Elk Society, Carl-Eric Granfelt, NAU, RMBO, Experience International, General Wildlife Services, Habitat Partnership Program, and the National Wild Turkey Federation. Tables 10 through 11 summarize wildlife program accomplishments, species and ecosystems benefitting from these accomplishments, and costs for completing these projects in 2014.

Partners contributed over \$108,905 in funding to projects in 2014. This resulted in 25,875 acres of habitat restoration and improvement, as well as construction, reconstruction, or maintenance of exclosures and guzzlers.

Table 1. Wildlife program project accomplishments and funding for fiscal year 2014

Project Type	Accomplishments (acres)	Funding
Partnership	11,067	\$108,905
Non-Partnership (all other funding sources)	14,808	\$612,549
Total	25,875	\$721,454

Table 7. Summary of projects by species/ecosystem benefitting from the wildlife program during fiscal years 2014

Benefitting Species / Ecosystem	Acres Improved
Wild Turkey	1,000
Northern Goshawk	13,01.8
Big Game	12,129
New Mexico Meadow Jumping Mouse	168
Abert's Squirrel	1,025
Other Birds	2,056.8
Total	17,680.6



Figure 8. New Mexico meadow jumping mouse.



Figure 9. Habitat for New Mexico meadow jumping mouse along the East Fork of the Little Colorado River.

Threatened, Endangered, Proposed, and Sensitive Species (TEPS)

In 2014, the ASNFs had two federally listed threatened, two federally listed endangered, and one experimental/non-essential terrestrial species: the Mexican spotted owl (T), yellow-billed cuckoo (T) southwestern willow flycatcher (E), New Mexico meadow jumping mouse (E) (figure 9), and the Mexican gray wolf, respectively.

In 2014, critical habitat continued to be proposed for the New Mexico meadow jumping mouse and proposed for yellow-billed cuckoo, with expected designation of critical habitat to occur in late 2015. Aquatic species are addressed in another section of this report. Mexican gray wolves are discussed under the Mexican Wolf Reintroduction Program section of this report.

There are currently 22 Forest Service sensitive terrestrial animal species, and 22 Forest Service sensitive rare plant species occurring on the ASNFs.

Monitoring

Monitoring terrestrial TEPS species during 2014 (table 13) was accomplished through partnerships and contracts, with the assistance and cooperation of the Arizona Game and Fish Department's Bald Eagle Nest Watch program, NAU, and RMBO.

Table 8. Summary of TEPS monitoring completed between 2014

Benefitting Species / Ecosystem	Number of PACs/PFAs/Nest Sites Monitored
Mexican Spotted Owl	72
Northern Goshawk	6
Bald Eagle	4
Southwestern Willow Flycatcher	1

Mexican Gray Wolf Reintroduction Program

The ASNFs actively worked with five other state and federal agencies to continue efforts in the reintroduction of the endangered Mexican gray wolf into the Blue Range Wolf Recovery Area (BRWRA) in New Mexico and Arizona.

From 2013 through 2014, Mexican gray wolf numbers increased by 30%, with a minimum of 110 wolves counted in Arizona and New Mexico. The field team located 40 wolves on the Apache portion of the ASNFs. These wolves made up seven packs that are maintaining territories on the ASNFs in 2014. A pack is composed of at least one adult pair.

One initial release occurred in 2014 on Alpine Ranger District of the ASNFs. No translocations occurred in 2014. A translocation is defined as when an individual free-ranging wolf is captured and moved to a location within either the Primary or Secondary Recovery Zone but away from the site of capture. This includes captured wolves that have been temporarily housed in captivity.

Reports from ranchers and others resulted in confirmation of 16 cases of livestock killed or injured by wolves on the ASNFs and private holdings in 2013. In 2014, 13 depredations on livestock were confirmed as wolf-caused. Additional livestock may have been killed by wolves but either were not found or were found too late to confirm the cause of death. In response to these problems, the Interagency Field Team conducts hazing on wolves known to kill livestock and uses other proactive measures to reduce depredations.

Four wolves are known to have died in the wild during 2012, and 7 died in 2013. In 2014, 11 wolf deaths were documented. All of these mortalities except five were from illegal shooting. The

other mortalities were from other causes which may include, but are not limited to, natural deaths, capture-related mortalities and legal public shooting.

Please report any encounters with wolves to the Interagency Field Team at 1-888-459-9656.

Aquatic Species

The ASNFs include habitat for eleven federally listed, and one candidate aquatic species including Gila trout, Chiricahua leopard frog, Gila chub, Little Colorado spinedace, Three Forks springsnail, and narrow-headed gartersnake. In 2014, narrow-headed gartersnake and northern Mexican gartersnake were listed as threatened species; a final ruling on proposed critical habitat for these species has not yet been published in the Federal Register. There are currently fourteen sensitive aquatic species present on the Forests. The ASNFs encompass aquatic habitat within the Gila, Salt, and Little Colorado River drainages. Aquatic and riparian habitats are a key component and important asset in managing National Forest System lands.

During FY 2014, ASNFs' biologists conducted analyses of forest projects that resulted in 5 biological assessments and evaluations written for aquatic species. The Forests requested concurrence for determinations of "not likely to adversely affect" on 3 projects and requested no formal consultations on aquatic species. Consultation requests were for landscape restoration, fence reconstruction and range allotment management projects.

Monitoring

Monitoring aquatic species was accomplished with the assistance and cooperation of range personnel, partner agencies, and contracts. Crossing internal and agency boundaries to build understanding and cooperation has been a focal point for the aquatics program. This cooperation resulted in monitoring being completed multiple times for many threatened, endangered, and sensitive (TES) aquatic species during the timeframe. Monitoring of Three Forks springsnails, spinedace, loach minnow, narrow-headed gartersnakes, Apache trout, Gila chub, Chiricahua leopard frog and Little Colorado spinedace was completed in FY2014. The ASNFs contracted surveys for loach minnow and their habitat in the Blue River and Chiricahua leopard frog in stock tanks. Recovery actions included the following: stocking of Chiricahua leopard frog. Removal of nonnative aquatic species was completed in West Fork Black River, Blue River and Three Forks springsnail habitats (Figure 3). A joint monitoring effort between USFWS and the Forest to assess sedimentation in the Blue watershed continued during the fiscal year. This monitoring will be able to look at trends in fine sediment and how it changes with spring runoff and monsoon rains.



Figure 10. Three Forks springsnail habitat work to prevent crayfish infestation.

Overall monitoring is showing that fish populations are rebounding post-Wallow Fire in the Black and Blue River drainages. Campbell Blue Creek, in the Blue River drainage had extensive spawning of native fish, and endangered loach minnows were detected for the first time in a decade (Figure 4).



Figure 11. Endangered loach minnow found in Campbell Blue Creek.

The ASNFs have continued a long-term stream temperature monitoring program that started in 2012. As of December 2014, forty-one data loggers have been placed within the the Black, Blue and Little Colorado River watersheds to monitor stream temperatures year round. This program will aid in identifying where climate change and increased stream temperatures may be an issue for native fish, as well as where management actions may be needed. The data will be used for climate change modelling and predict increases in stream temperature once a few continuous years of data have been collected. Data from data loggers are downloaded annually and entered into a national database. The work is part of the Rocky Mountain Research Station stream temperature monitoring program.

Projects

There were a total of 11 projects completed during the timeframe for TES and other aquatic species. Projects resulted in 28.6 miles of stream habitat restoration and 48.5 miles of stream habitat inventoried. Projects included species restoration, habitat restoration and protection, salt cedar removal, barrier reinstallation post-fire, barrier removals, and inventories. Species benefiting from these projects include Chiricahua and lowland leopard frogs, Three Forks springsnail, loach minnow, spikedace, narrow-headed gartersnake, roundtail chub, and Apache trout.

Partner contributions were over \$65,000 in funding and labor for these projects including U.S. Fish and Wildlife Service, Arizona Game and Fish Department, National Wild Turkey Federation and Bureau of Reclamation. Many of these projects documented recovery of aquatic species post-Wallow Fire. Partners and volunteers are vital to accomplishments on the ASNFs.

Transportation

One of the desired conditions in the ASNFs 2015 Land Management Plan is “A maintained road and motorized trail system is in place and provides for safety and access for the use (e.g., recreation, minerals, vegetation treatment, fire protection) of the Apache-Sitgreaves NFs.” Road maintenance and reconstruction are major activities which provide access to support forest restoration, fire management, and recreation.

The ASNF’s transportation system comprises more than 700 miles of roads designed and maintained for passenger vehicles and over 2,000 miles of roads designed and maintained for high clearance vehicles. Approximately 3,000 miles of roads are in storage to be opened for specific projects (e.g., for commercial product removal) and then placed back in storage at the completion of the project; these roads are closed to all motorized travel while in storage.

During 2014 the ASNFs performed routine road maintenance on 731 miles of road and improved/reconstructed 39 miles through force account, contracts and vegetation projects (Table 14). The Forests decommissioned 5 miles of unauthorized user-created routes.

Table 9. Road maintenance and improvement in fiscal year 2014.

Miles of Routine Road Maintenance		Miles of Road Improvement	
Level 2 Roads (High Clearance)	Level 3-5 Roads (Passenger Cars)	Level 2 Roads (High Clearance)	Level 3-5 Roads (Passenger Cars)
165	566	6	33

In 2014, \$50,000 of restoration funds were used to reconstruct 4.5 miles of NFSR 22. Work consisted of installing drainage structures, placing riprap at the outlets of grade dips to stabilize the roadway and minimize sedimentation into the adjacent Morgan Creek, and using a mobile rock trimmer to utilize the oversized rock along the roadbed to stabilize the native soil surfacing (Figure AA). The Forests continued to stabilize road drainage structures and install additional road drainage structures to minimize road damage due to increased precipitation runoff resulting from the 2011 Wallow Fire.



Figure 12. Mobile rock trimmer in use on Pratt Lake Road, March, 2014.

NFSR 249

The purpose of this project was to provide roadway improvements on approximately 17 miles of roadway to provide for better access from Alpine, Show Low and Lakeside to the Big Lake Recreation Area, to improve the two watersheds the route traverses by minimizing sedimentation from aggregate surfacing and un-stabilized ditch lines, and to reduce erosion caused by undersized drainage structures. The improvements included widening of sections of the roadway to provide consistent and adequate lane width along the entire route, adding additional guardrail, replacing obsolete guardrail, replacing and/ or reconstructing existing drainage structures, stabilizing ditches, paving with asphalt, and installing signage and striping (Figure BA). This project was made possible by the Central Federal Lands Highway Division (CFLHD) of the Federal Highway Administration (FHWA), in cooperation with Apache County, Southwestern Regional Forest Service Office and the Apache-Sitgreaves National Forest. The final construction costs of this project was \$12.5 million.



Figure 13. Newly paved NFSR 249, a project that was completed in fiscal year 2014.

NFSR 24, Bear Creek Crossing Stabilization Project

In 2012 a section of Forest Road 24 had to be closed due to a flood event that washed out a large culvert. The road was impassable because of a 20-25 foot cut through the roadway. In 2014, Engineering, Watershed and Fisheries personnel on the Apache-Sitgreaves NFs developed a low-cost plan to repair the washout that would stabilize the cutout drainage by using methods designed to reduce or repair small headcuts, and that would allow the road to be re-opened. They constructed a low-water crossing from materials which were readily available at the site, including 24-36" logs from burned trees, large rocks, and Jersey barriers left over from the Wallow Fire. The combination of the logs, rip rap and Jersey barriers has stopped the large head cut from migrating upstream and downstream of the road. Bank cutting and lateral stream migration have been greatly reduced following the completion of the project, and the stream banks have begun revegetating (Figure BB). This project was jointly funded with road funds and watershed funds. The total cost of this project was approximately \$60,000. To replace the washed-out culvert with a new, larger one would have been at least twice the cost, while a bridge would cost ten times as much.



Figure 14. Completed low water crossing on Forest Road 24.

Administrative Facilities

The ASNFs continue to reduce deferred maintenance of administrative facilities through both large and small projects and to reduce overall facility square footage in an effort to decrease our maintenance needs. The objective of these projects is to provide, in a cost-effective manner, a safe and pleasant environment for both employees and the public.

Larger projects completed in fiscal year 2014 include the following:

- An underutilized 8-person quarters building was relocated from Springerville RD to the Strayhorse Administrative Site. It is now heavily utilized by trail crews and fire crews stationed at the remote administrative site. The existing generator-based power supply was updated to a solar-powered power supply; the generator now serves as a backup system.
- Backflow preventers were installed at the Springerville District Yard for compliance with ADEQ and EPA.
- Two duplexes were decommissioned at the closed Chevelon Work Center; this will be a continuing project as funds are made available until all of the no-longer-used buildings are gone and the site is returned to a more natural state.
- Three other no-longer-used buildings which had no commercial value were decommissioned on the forests.

Lands and Minerals

The mission of the ASNFs' lands and realty management program is to secure and protect America's public rights, title, value, and interest in its national forests and grasslands and authorize a variety of uses on those lands to meet the needs of present and future generations. Security and protection of the public's interests in National Forest System (NFS) lands is essential to the land stewardship and public trust responsibilities of the Forest Service.

Land Exchanges

A land exchange is a discretionary and voluntary real estate transaction that is considered only if it is in the public interest and is consistent with the Apache-Sitgreaves National Forests Plan. The ASNFs have captured opportunities to consolidate land ownership patterns to meet the objectives of the Plan and to improve land management efficiency and to meet the needs of the public. Thousands of acres of NFS lands have been obtained under various land adjustment authorities.

The land exchange adjustment program has served as an effective tool to acquire desirable non-federal lands. Exchange of lands is beneficial in several ways. Exchange allows rural communities to expand and support growth; acquires property with significant natural resource values such as riparian areas, wildlife and fish habitat, archaeological sites, and rangelands; provides for expansion of recreational opportunities; and consolidates fragmented ownership patterns. Furthermore, the acquisition of non-federal lands reduces land boundary maintenance costs and rights-of-way access to severed NFS lands. The ASNFs receive proposals for private acquisition of NFS lands in exchange for non-federal lands with higher forest or resource qualities.

The forest is in the course of processing the Camp Tatiyee Land Exchange (CTLE), which consists of exchanging one federal (highly encumbered) and 14 non-federal parcels (Figure 15). The exchange proposes to convey ~344 acres of federal land and acquire ~1719 acres of non-federal land scattered throughout southern Arizona forests. The forest submitted the Request for Appraisal Services to the Regional Office in August 2014 prepares to begin the NEPA Environmental Impact Statement in FY2015.

Lands Special Uses

Lands special uses are a form of authorization for use by individuals, companies, organized groups, other Federal agencies, and State and local governments. Authorizations have been granted for uses such as high/low powered electrical transmission lines & facilities, irrigation impoundment & distribution ditches/pipelines, wireless telecommunication sites, and road rights-of-ways County, and private road rights-of-way easements. Roughly 30 new special use permits (SUP) were authorized and roughly 50 SUPs were administered to standard. The Forest continues to screen proposals to determine appropriate use of NFS lands.

Boundary and Title Management

The 2014 accomplishments were a result of the 2011 Wallow Fire, which damaged and obliterated many miles of land boundary markers. Approximately 11 miles of the remaining 36.5 miles identified of NFS land boundaries were resurveyed, remarked, and reposted. These surveys



Figure 15. CTLE non-federal Rucker parcel to be acquired.



Figure 16. Resurvey, remarking, and reposting of NF Property Boundary as a result of 2011 Wallow Fire.

were made possible in cooperation with adjacent private land owners and completed by Arizona Bureau of Land Management cadastral surveys with rehabilitation and restoration funds. Accurate marked boundaries enable the Forests to properly manage up to NFS land boundaries adjacent to other ownerships, reduces & identifies the number of potential unauthorized uses, encroachment, & title conflicts, protection of established land boundary markers, and clearly identify public lands for public use in all respective areas.

Encroachment

d. Encroachment typically occurs when NFS property boundaries are not delineated and maintained to standard or because of faulty land title or erroneous surveys. At times encroachment is caused by failure to honor existing marked NFS land boundaries. Ranger district staffs continue their efforts to identify and resolve these cases annually. As a result of completing 11 miles of remarking/reposting NF lands boundaries four new encroachments were discovered such as off-line fence lines, homestead cabin/corrals, improvements, and junk. Additionally, three new encroachments were discovered and one encroachment was resolved with improvements removed. Numerous encroachments still exist forest-wide, but due to capacity and other priority of work remain unresolved.

Minerals

The forest administered to standard (office review only) five locatable rare picture rock sandstone. Due to the forest's priority work load and capacity it did not complete any field inspections. No leaseable minerals were authorized. The forest permitted roughly 61 salable mineral materials (sand, gravel, cinders, and building stone with occasional). Primary users include private individuals, counties, Arizona Department of Transportation, and internal Forest Service use for road maintenance.

Forest Products / Resource Management

Fiscal Year 2014 marked a transition for the ASNFs, bringing to a close the White Mountain Stewardship era and ushering in an accelerated emphasis towards 4FRI Integrated Restoration Service Contract (IRSC) task orders, conventional timber sales, local agreements and other best value stewardship contract mechanisms. The forest continued to provide a sustainable supply of wood products for personal use and other commercial local and regional markets. There were nine salvage sales sold, four IRTC Stewardship contracts, one 4FRI task order, and one green timber sale contract. The total volume sold in fiscal year 2014 was 65,698 CCF (Table XX).

Table 10. Commercial timber and personal use and commercial permits sold in FY 2014

Acres Harvested	Commercial Timber Sold (CCF)	Personal Use and Commercial Permits Sold (CCF)	Total Volume (CCF)
9,342	54,296	11,402	65,698

A total of 2,549 acres received silvicultural reforestation treatments in fiscal year 2014. This entire total was located on acres burned by recent and/or past wildfires across ANSF districts. This activity included artificial tree planting and certification of naturally regenerated acres.

Approximately 6,821 acres across the ASNFs received timber stand improvement (TSI) treatments in fiscal 2014. This total includes intermediate thinning of non-commercial or non-merchantable understory trees, including some sanitation removal and/or pruning of disease-infected small trees included under TSI service contracts. Timber stand improvements also occurred as part of overall restoration treatment prescriptions on acres implemented within

commercial forest product contracts and/or timber sales in the White Mountain Stewardship or 4FRI contract task orders.

Biomass/Hazardous Fuels Utilization

Forest biomass is both a component of mechanical treatment activities (limbs and tops) and pre-existing natural fuels. This material represents a considerable portion of forest hazardous fuels and potential convertible forest product. In 2014, this fiber “by-product” generated during mechanical treatments continued to observe an increase in utilization removed per acre, driven primarily by two factors; the availability of a \$20/BDT BCAP subsidy through FSA and the proximity of a cogeneration facility to the treatment areas. Roughly three quarters of the biomass removed was utilized in local facilities to make commercial wood pellets and electricity. Additional residual material was left on site to provide woody material for soil nutrient enhancement and improve watershed condition.

Insects and Diseases

Annual aerial detection survey (ADS) flight data of recent tree mortality attributable to insects is reported using 5 classes of percent mortality ranging from very light to very severe within each polygon of insect activity mapped from the air. In 2014, tree mortality due to bark beetle species was seen in all 5 classes, but the greatest impacts were noted in the Light (4-10% mortality) and Moderate (11-29% mortality) classes.

Major Insect categories identified by the 2014 ADS mapping flights across the ASNFs, in order of highest acreages affected:

- **Bark beetles** (9 active beetle species visibly detected in numerous conifer host tree species) = 109,586 total acres, down somewhat from the 2013 total beetle acres mapped. However, Douglas-fir and southwestern white pine tree mortality on the Apache NF due to bark beetles is still high [Moderate and Severe (30-50% mortality) classes], while spruce mortality increased notably in 2014. The 2014 ADS report for the Apache-Sitgreaves NF states “The overstory spruce mortality may significantly alter the site-changing species composition and diameter distribution on the affected lands.”
- **Defoliators** (3 active insect species visibly detected) = 180 acres of conifers; and 1,210 acres of aspen damage which also had drought and secondary biotic/abiotic contributing factors to aspen decline and/or mortality. This trend is generally down from most recent previous years.

The effects of the 2011 Wallow Fire across the Apache National Forest continued to become apparent in subsequent years. Bark beetle outbreaks occurred in live trees of all conifer species because trees were weakened by the fire, as well as by persistent pathogens, overcrowded forest conditions in unburned/lightly burned areas, and prolonged drought stress.

The ASNFs employed the use of beetle pheromones to steer adult beetles of target species away from laying eggs in key mixed-conifer forested areas critical to the local recreation economy and threatened and endangered species critical habitat. Prompt removal of beetle-infested trees (imminent mortality) from campgrounds is another important step in the overall success of beetle control efforts. In 2014, over 1200 beetle-infested/green hazard trees of all species were removed from numerous campground sites (about 300 acres total) in the Big Lake Recreation Complex. No other sales of specifically insect-infested trees occurred in 2014, although scattered infested trees are usually marked for removal during normal forest restoration thinning projects annually.

Local and regional entomologists, foresters, biologists, and recreation staff collaborated with an Arizona-based young adult conservation corps to provide field labor. Due to the high cost and tight timeframe of the beetle flight, only a limited number of key acres could be treated. In the 2014 season, 615 acres were successfully treated within developed campgrounds on the

Springerville and Alpine Ranger Districts, including the popular Big Lake Recreation Complex. Another 1,184 acres of Mexican spotted owl (MSO) habitat that survived the Wallow Fire were also treated.

Beetle population trends were monitored on the forest using other trap type methods of attractant pheromones also. During the June 2014 Douglas-fir bark beetle flight season approximately 7,350 beetles were collected per trap in a 2-week period at the Big Lake trap site (roughly double the 2013 number collected). This number was slightly less for the rest of the Wallow Fire beetle sites, but still a significant increase over 2013 numbers. During the August 2014 peak Mountain pine beetle flight season at trap sites across the Wallow Fire area, approximately 295 beetles were collected per trap in a 2-week period (roughly 4 times the 2013 number). This work has continued in 2015 and is expected to be needed for at least another one to three years until the outbreak subsides. Beetle pheromones pose no harm to humans or the environment when installed correctly but must be reapplied every year. These projects contribute toward the national Western Bark Beetle Initiative.

Major Disease categories identified in 2014 by various survey methods across the ASNFs were, in order of highest known occurrence:

- **Dwarf Mistletoes** (persistent pathogens which do not spread or intensify fast enough for an annual comparison) = lightly to heavily-infected areas are common across all forest and woodland types. An estimated 50-60% of all forested acres have some level of infection. Heavy infection predisposes trees to increased bark beetle attack and mortality.
- **Root Diseases** (also spread slowly so that overall incidence changes little from year to year) = widely scattered across aspen, mixed-conifer, spruce-fir and pine forest types. Infection centers occur in pockets and predispose afflicted trees to more rapid mortality from drought and insect attack.
- **Stem Rusts**, most importantly White Pine Blister Rust (WPBR, an introduced pathogen) which was first discovered on the ASNFs in 2009. In conjunction with the USFS AZ Zone Forest Health Pathologist, Northern Arizona University continued in 2014 with a WPBR mapping and plot monitoring project across the ASNFs to assess the full extent of this disease's presence and spread in southwestern white pine. Some seed cone collections from this host tree species were done as part of an ongoing Region-3 genetic WPBR resistance testing program.
- **Unknown ponderosa pine blight** on 2,739 acres of the Sitgreaves NF in 2014.
- **Needle Casts/Needle Scale**, isolated occurrences found on ponderosa pine and piñon pines in the Apache NF in 2014.

Recreation

Visual Quality Objective Compliance bi-annual monitoring ensures Forest standards and guidelines for visual management is met. The Forest maintains and enhances visual resource values by including visual quality objectives in resource planning and management activities. Three projects work plans involving construction and maintenance for major developed recreation areas have been analyzed.

Blue Vista Overlook resource planning improvements constructed a scenic viewing platform, with interpretive signs and staining of an existing retaining wall to meet Visual Quality Objectives. The Landform shaping borrows from the natural established form, line, color, and texture, and blends in with the natural landscape. Visitors are provided the opportunity to experience the picturesque vista (Figure 17).



Figure 17. Blue Vista Overlook.

At Blackjack Campground, the Forest installed a new vault toilet (Figure 18) and constructed a new accessible pathway at the group site (Figure 19). This project management activity follows and repeats forms, lines, colors and textures that are distinctly found in the naturally evolved landscape character being viewed. There are no evident changes in the size intensity, direction or pattern of the surrounding landscape character. The project complies with Forest Plan visual direction of Retention.



Figure 18. Blackjack Campground vault toilet.



Figure 19. Blackjack Campground accessible pathway.

At Lewis Canyon Campground, the Forest demolished an outdated outhouse and installed a new vault toilet (Figure 20).



Figure 20. Lewis Canyon Campground vault toilet.

All Forest replacement and construction of facilities is ongoing with the intent to better accommodate for accessibility. The facility has a ponderosa pine tree background and because of the careful architectural design and color selection, the form, line, color, and texture of the toilet borrow from the natural landscape and do not stand out in the foreground. This is an excellent example of a recreation structure in the landscape meeting retention.

Plan Revision

The ASNFs has completed the Revised Apache-Sitgreaves National Forests Land Management Plan. The revised plan provides direction to forest specialists on managing the natural resources across the Forests. The revised plan (LMP), final environmental impact statement (FEIS), and record of decision have been posted to the forests' web page at <http://www.fs.usda.gov/goto/ForestPlanFEIS>. The Notice of Availability for the FEIS is expected to be published in September, 2015. For additional information on the revised plan, please visit the Forests' website at <http://www.fs.usda.gov/asnf> or call the Apache-Sitgreaves National Forests Supervisor's Office at 928-333-6280.